

The image features a complex industrial scene with large stainless steel pipes, tanks, and structural supports. The entire scene is overlaid with a semi-transparent blue filter. A white diagonal line runs from the top left towards the center. The background is composed of a technical piping diagram, which is a detailed schematic of industrial processes showing various vessels, pumps, and connecting lines.

VOMM

**Drying plants
for industry and
environment**

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1 - Company Presentation

- For more than 50 years, Vomm has been designing and building plants all over the world based on continuous thermal processes such as ultraconcentration, drying, incineration, combustion, heat recovery up to the production of green energy and continuous non-thermal processes such as granulation, kneading, mixing and reaction.
- We provide tailor-made solutions for continuous processes based on customer needs in terms of raw materials, intermediates, products and waste and offers pilot-scale testing facilities.
- We are involved in European research and development projects to convert industrial or agro-industrial by-products or waste into green resources and operates in the food, chemical, pharmaceutical and environmental sectors.
- We offer various services for its industrial plants: pre-commissioning, commissioning, start-up and training services, O&M.
- We guarantee value-added services such as: supervision, maintenance, remote control.
- WE proved operation & maintenance, and support services to our customers worldwide.



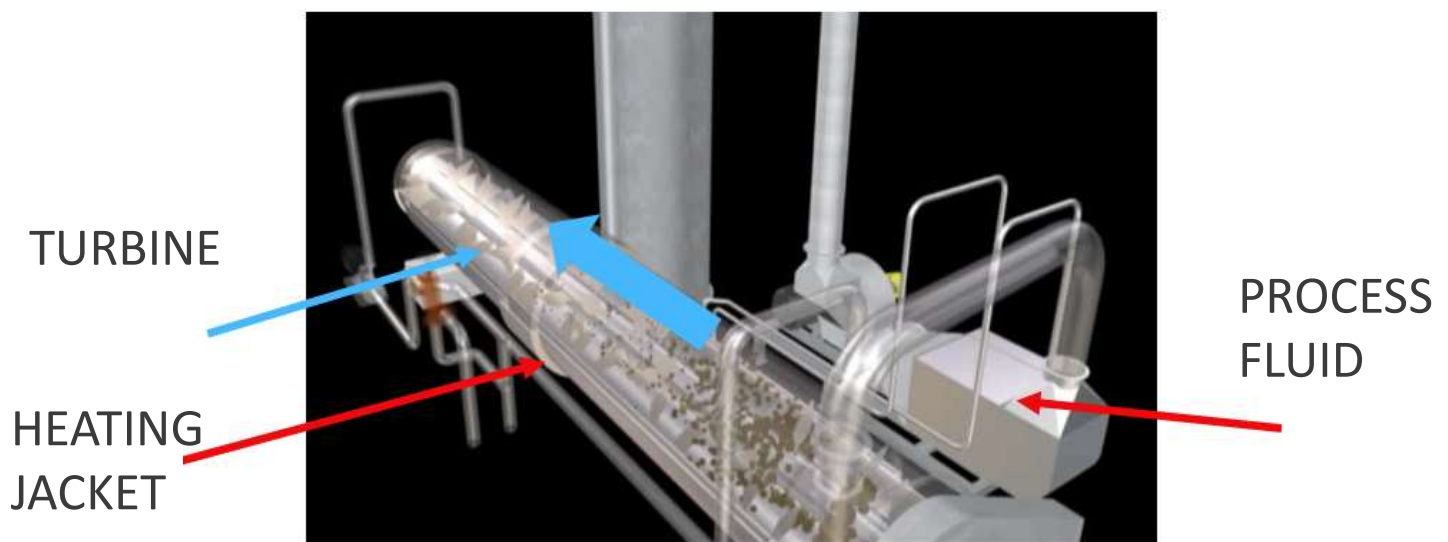
- From 2025, the Private Equity Company Aksia Group SGR owns 100% of Vomm Impianti e Processi S.p.A..

2 – Turbo Dryer - thin-film drying technology

TURBO DRYER

PELLET PRODUCTION

Vomm Turbo Technology is based on the formation of a thin film in conditions of high turbulence, through the action of a turbine. Heat exchange takes place both by conduction and convection.



The turbine rotates at high speed and evenly spreads the sludge on the exchange surface.



Strengths

Continuous Process:

The loading of the dewatered sludge and the removal of the dried sludge take place continuously, and the operating configuration of the plant can be adapted to the specific characteristics of the sludge thanks to the possibility of tuning the operating parameters (inclination of the blades, rotation speed, etc.).

Thin film of sludge and intensive agitation:

The system enables not only close contact between the sludge particles and the heat exchange surfaces, but also continuous mixing of the sludge inside the chamber, thus ensuring that the entire mass is effectively and uniformly subjected to the thermal drying process.

High specific evaporative surface and excellent thermal transmittance coefficient:

The chamber geometry and the distribution of the heat allow optimal exposure of the stream to be dried to the exchange surfaces and thus results in a particularly effective heat transfer. As a direct consequence, the space requirement of the dryer is dramatically limited.

Low residence time:

This is an important aspect in terms of safety and also facilitates maintenance operations.

Flexibility:

The adaptability of VOMM technology is demonstrated by the large number of drying plants for different types of streams and sludge drying plants built for dewatered sludge from different purification plants, under different and critical operating conditions.

Mechanical robustness and reliability:

The mechanical construction meets the most demanding requirements of robustness, solidity and durability, ensuring a long life of the system.

Heat recovery:

The system allows it in the form of hot water (80/85 °C) equal to about 50% of the thermal power supplied to the dryer

3 - Current context and evolution of the legislation.

Sewage sludge: current scenarios and prospects

Sludge management is still affected by uncertainties arising from unclear and significantly different legislation between countries.

However, also considering the significant changes expected due to the already enacted EU Sewage Treatment Plant Directive and the upcoming update of the EU Sludge Directive, the trend is clear:

- Sludge production will gradually increase.
- Agricultural reuse will be limited, bearing in mind that in some countries such reuse has already been banned and others have adopted increasingly stringent limits on various organic and inorganic pollutants.
- The New European Fertilizer Regulation no. 2019/1009 excludes the use of both urban and industrial sludge for the production of organic fertilizers to be placed on the EU market.

Wastewater treatment: energy autonomy and nutrient recovery (P, N) – EU DIRECTIVE 2024/3019

- In accordance with the recent directive, all urban wastewater treatment plants with a capacity greater than or equal to 10,000 p.e. will have to cover 100% of the energy through self-production. Sludge drying and the WasteToEnergy process of dried sludge will be one of the key solutions
- Energy recovery through improved anaerobic treatment and biogas production will be a key driver
- The recovery of nutrients, mainly nitrogen and phosphorus, is one of the highlights of the new directive. This is possible through processes that solve the problem of dilution of N and P in water
- Water reuse is also part of the strategy

DIGESTATES: OFMSW, AGRICULTURAL AND FOOD BIOMASS

- Optimization of production processes pursuant to Legislative Decree No. 75/2010
- New production lines pursuant to EU Regulation 2019/1009

4 – Vomm solutions:

Integrated platforms: from "wasted energy" to "new energy"



Clean water reuse



Pellet



Sludge



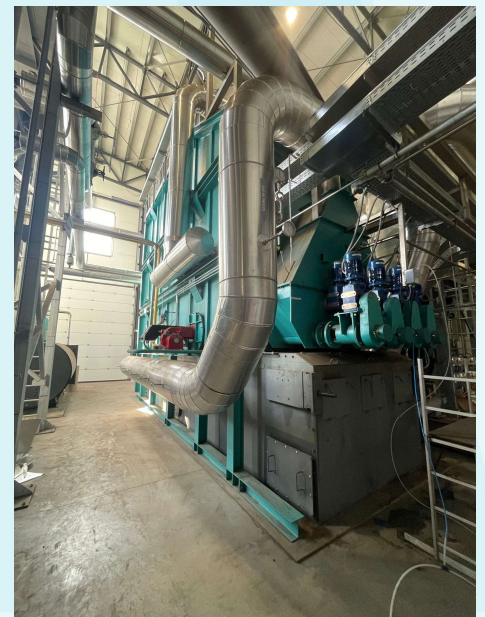
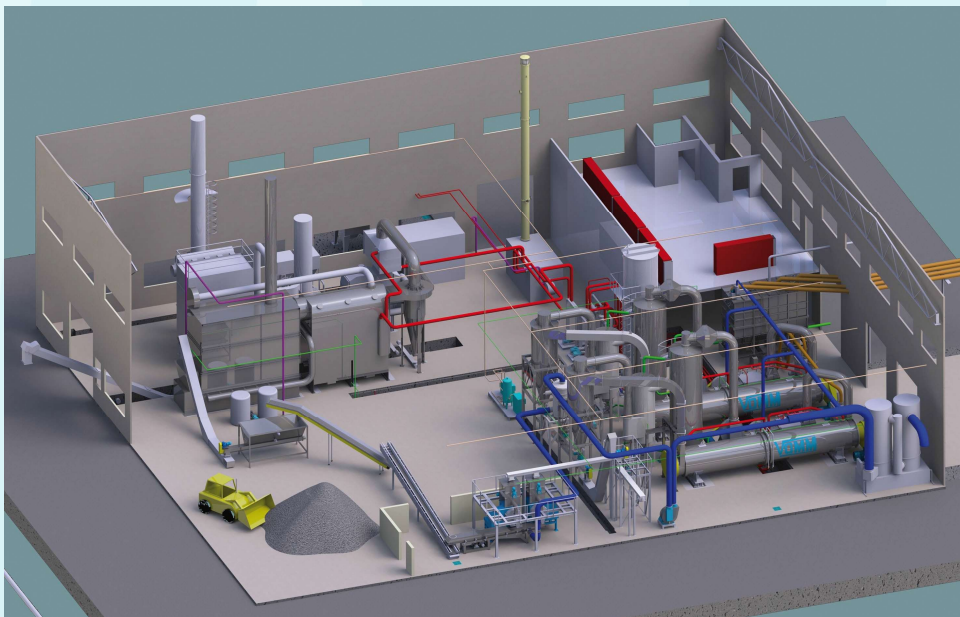
WasteToEnergy

TURBO DRYER

PELLET PRODUCTION

GRATE COMBUSTION

GASES TREATMENT



Strengths

Flexibility:

Even in the event of a combustion plant shutdown, the sludge is brought back to low humidity conditions, pelletized, stabilized and sanitized, thus facilitating its temporary storage and transfer to external sites much more easily.

No Inert Material:

It is not necessary for combustion to work, thus simplifying the technological chain related to the treatment of exhausted gases and avoiding side effects (such as mechanical wear due to abrasion). In addition, it is not found inert in the ashes to be disposed of.

Emissions :

Due to the dry content coming out of the dryer, the flow rates are very high, resulting in the optimization of the reagents required for air treatment. Quality of purified water compatible with reuse.

Ash and nutrient recovery:

Most of the ash (up to 90%) is discharged at the end of the grate, significantly reducing wear and tear on the heat exchangers and the entire equipment related to the flue gas cleaning cycle. In addition, this solution makes the recovery of phosphorus from ashes much more effective.

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Fanghi Organici
Sostenibili per il Futuro



I partner del progetto:
A2A Ambiente S.p.A. (capofila),
MM S.p.A., Arcadia Consulting S.r.l., Isinnova
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DIGESTATES: OFMSW, AGRICULTURAL AND FOOD BIOMASS

- Improved process flexibility
 - Integration with existing processes / new production lines
 - Reduction of space
 - Reduce impacts
- Improved product quality
 - High homogeneity
 - Sanitation
 - Market compliance



The image features a complex industrial scene with large stainless steel pipes, tanks, and structural supports, all bathed in a teal light. A white diagonal band cuts across the upper left, containing the VOMM logo. The background is a detailed technical drawing of a piping system, overlaid on the industrial photograph.

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